IN THE CLAIMS IS:

1. A transparent conductive film comprising a lower layer containing a fine metal powder in a silica-based matrix, provided on the surface of a transparent substrate.

2. The transparent conductive film according to claim 1, wherein said fine metal powder comprises at least one metal selected from the group consisting of Fe, Co, Ni, Cr, W, Al, In, Zn, Pb, Sb, Bi, Sn, Ce, Cd, Pd, Cu, Rh, Ru, Pt, Ag and Au, and/or an alloy comprising of at least two of said metals, and/or a mixture comprising at least two of said metals and/or a mixture comprising at least two of said alloys.

3. The transparent conductive film according to claim 2, wherein said metal is selected from the group consisting of Ni, W, ~~In, Zn,~~ Sn, Pd, Cu, Rh, Ru, Pt, Ag, Bi and Au.

4. The transparent conductive film according to claim 1, wherein said transparent substrate is selected from a CRT, a plasma display, an EL display, and a liquid crystal display.

5. The transparent conductive film according to claim 1, wherein said film further has a high contrast property and said lower layer further contains a black powder, in addition to said fine metal powder, in the silica-based matrix.

6. The transparent conductive film according to claim 5, wherein said black powder is titanium black.

7. The transparent conductive film according to claim 5, wherein said fine metal powder is present in a range of from 5 to 97 wt.% relative to the total amount of the fine metal powder and the black powder.

Sub A1

8. A transparent black conductive film forming composition comprising a dispersed solution formed by dispersing a fine metal powder and a black powder in a solvent.

~~9~~ 8. The composition according to claim ~~8~~ 1, wherein said composition further contains at

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least one titanium compound selected from the group consisting of alkoxy titanium, an~~d~~ at least partially hydrolyzed product thereof and a titanium coupling agent, in an amount in the range of from 0.1 to 5 wt.% relative to the total amount of the fine metal powder and the black powder.

10. The transparent conductive film according to any one of claim 1, wherein, in said lower layer, secondary particles of said fine metal powder are distributed so as to form a secondary net structure having pores not therein containing the fine metal powder.

11. The transparent conductive film according to claim 10, wherein said pores of net structure have an average area within the range of from 2,500 to 30,000 nm^2 and said pores account for from 30 to 70% of the total area of the film.

Sub A2

12. A conductive film forming composition, comprising a solvent containing a dispersant said solvent comprising a dispersed solution formed by dispersing a fine metal powder having an average primary particle size within a range of from 2 to 30 nm and said solvent contains at least one of from 1 to 30 wt.% propylene glycol methylether, from 1 to 30 wt.% isopropylglycol and from 1 to 10 wt.% 4-hydroxy-4-methyl-2-pentanone.

13. The transparent conductive film according to claim 1, wherein said lower layer has surface irregularities; the convex portions of the lower layer have an average film thickness within a range of from 50 to 150 nm; the concave portions have an average film thickness of from 50 to 85% of that of the convex portions; and said convex portions have an average pitch in a range of from 20 to 300 nm.

Sub A3

14. A conductive film forming composition comprising a solvent containing a dispersant said solvent comprising a dispersed solution formed by dispersing a fine metal powder having an average primary particle size within a range of from 5 to 50 nm; and said fine metal powder forms secondary particles having a particle size distribution represented by

a 10% cumulative particle size of up to 60 nm, a 50% cumulative particle size in a range of ~~from~~ 50 to 150 nm and a 90% cumulative particle size in the range of from 80 to 500 nm.

~~15~~ 5. A composition according to claim ~~12~~ 3, wherein said composition further comprises at least one coupling agent selected from the group consisting of a titanate-based coupling agent and an aluminum-based coupling agent.

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~~16~~ 6. A composition according to claim ~~8~~ 1, wherein said composition is substantially ~~in the absence~~ free of a binder.

~~17~~ 7. A composition according to claim ~~8~~ 1, wherein said composition further comprises a binder selected from the group consisting of alkoxysilane and a hydrolysis product thereof.

Sub A4

18. A conductive film forming composition comprising a dispersed solution formed by dispersing a fine metal powder having a primary particle size of up to 20 nm in an amount within the range of from 0.20 to 0.50 wt.% in an organic solvent containing water, wherein said solvent contains (1) a surfactant in an amount in the range of from 0.0020 to 0.080 wt.% containing a perfluoro group and/or (2) a compound selected from the group consisting of a polyhydric alcohol, polyalkylene glycol and a monoalkylether derivative thereof in a total amount in the range of from 0.10 to 3.0 wt.%.

19. A conductive film forming composition comprising an aqueous dispersion containing a fine metal powder having a primary particle size of up to 20 nm in an amount in the range of from 2.0 to 10.0 wt.%, wherein the dispersant has an electric conductivity of up to 7.0 mS/cm and a pH in the range of from 3.8 to 9.0, and is used by diluting with a solvent.

~~20~~ 10. A composition according to claim ~~19~~ 9, wherein said composition further contains a compound selected from the group consisting of methanol, ethanol and a mixture thereof in a total amount of up to 40 wt.%.

11 ~~21~~. A conductive film forming composition according to claim 9 ~~19~~, wherein said composition further contains (1) polyhydric alcohol and (2) at least one compound selected from the group consisting of polyalkylene glycol and a monoalkylether derivative thereof in a total amount of up to 30 wt.%.

12 ~~22~~. A composition according to claim 9 ~~19~~, wherein said composition further contains at least one compound selected from the group consisting of ethylene glycol monomethylether, thioglycol, t-thioglycol and dimethylsulfoxide in a total amount of up to 15 wt.%.

13 ~~23~~. A composition according to claim 9 ~~19~~, wherein said composition further contains at least one organic solvent other than ethyleneglycol monomethylether, thioglycol, t-thioglycol or dimethyl-sulfoxide, in a total amount of up to 2 wt.%.

Sub A5

24. A composition according to claim 18, wherein said fine metal powder comprises at least one metal selected from the group consisting of Fe, Co, Ni, Cr, W, Al, In, Zn, Pb, Sb, Bi, Sn, Ce, Cd, Pd, Cu, Rh, Ru, Pt, Ag and Au, and/or an alloy comprising at least two of said metals, and/or a mixture comprising at least two of said metals and/or a mixture comprising at least two of said alloys.

15 ~~25~~. A composition according to claim 14 ~~24~~, wherein said metal is selected from the group consisting of Ni, Cu, Pd, Rh, Ru, Pt, Ag and Au.

16 ~~26~~. A composition according to claim 8 ~~18~~, wherein said fine metal powder comprises a metal other than Fe and the composition contains Fe as an impurity in an amount in the range of from 0.0020 to 0.015 wt.%.

27. A method of forming a transparent conductive film comprising the steps of coating a transparent substrate with the composition according to claim 8 and drying the resultant coated film.

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28. A method of forming a transparent conductive film substantially free from a binder, comprising the steps of coating a transparent substrate with the composition according to claim 16, drying the resultant coated film and heat-treating the dried transparent conductive film at a temperature of at least 250°C.

29. A method of forming a double-layer transparent conductive film having a low reflectance, comprising the steps of coating a transparent substrate with the composition according to claim 16, forming a conductive film substantially free from a binder by drying the resultant coated film, and overcoating with a silica-based film by coating the resulting conductive film with a solution of alkoxysilane or an at least partial hydrolysis product thereof.

30. A method according to claim 28, wherein the method comprises the step of forming a silica-based fine concave-convex layer using a spraying method on a double-layer transparent conductive film.